ATTACHMENT A

R marks

Considering the matters raised in the Office Action in the same order as raised, with respect to the two sets of claims, it is noted that claims 11-20 have been canceled since the features thereof are, in general, effectively defined in claims 1-10.

Before considering the rejection on prior art, the other amendments made to the specification and claims will be discussed. First, the wording "IS CONTAINED" has been removed from the second line of page 16 since the inclusion thereof was clearly a clerical error. With respect to the claims, the wording "in an outer container," has been added to line 12 of claim 1 in order to provide an antecedent basis for that term which appears in claim 6, and the word "fluid" has been added before "contacts" in the same line. Further, the word "treatment" has been added before the word "container" in line 13 of claim 1 in order to differentiate this container from the outer container. In addition, line 15 of claim 1 has been amended to read "pressurize the transmission fluid to a controlled level and prevent cavitation." The underlined recitation has been added to more clearly define over the Bolleman et al patent as discussed below. Further, the wording ", the outer container having an interior and said pressurization means comprising a hydraulic cylinder connected to the interior of the outer container, the hydraulic cylinder including a piston therein and means for applying a predetermined pressure to the piston in the hydraulic cylinder" has been added to the end of claim 1 in order to more fully define the pressurization means. This point is also discussed below.

With respect to the other claims, claim 6 has been amended to change the word "an" in the second line to "the" since there is now proper antecedent basis for "the outer container" in amended claim 1. Claim 8 has been canceled because the features thereof are now included in amended claim 1. Claim 9 has been amended to be dependent from claim 2 since claim 8 has been canceled. Claim 10 has been amended to correct the claim dependency thereof. Claims 11-20 have been canceled as noted above. A new claim 21 has been added to define a feature that originally appears at lines 20-24 of page 10 of the specification. A new claim 22 has been added which specifies that the hydraulic cylinder is loaded by an air cylinder as provided at line 26 of

page 11. Finally, a new claim 23 has been added which is based on claim 11 and recites the frequency range for the ultrasonic vibrations.

Turning to the rejection on prior art, "[o]ne single invention of two sets of the claims (1-10) and (11-18) with the first independent claim 1 as the main invention" has been rejected under 35 USC 103(a) as being "unpatentable over Bolleman et al (5,395,592 as submitted) alone or with Everett (4,086,057) and Cordemans et al (6,540,922)." As indicated above, claim 1 has been amended to more clearly distinguish over the cited references.

It is respectfully submitted that while the Bolleman et al patent discloses an apparatus which is similar in some respects to that of the present invention, there are important differences. In this regard, the purpose of pressurizing the coupling fluid in the Bolleman et al patent is to equalize the pressure of the coupling fluid with that of the process liquid, and as stated in the patent, the pressure equalizing means could be as simple as providing an elastic membrane between the coupling liquid and the process liquid (see lines 27-32 of column 8). Claim 1, as amended, recites that the pressurizing means comprises an hydraulic cylinder connected to the interior of the outer container and that the hydraulic cylinder includes means for applying a predetermined pressure to the piston in the hydraulic cylinder. This arrangement permits pressurization of the transmission fluid completely independently of whatever pressure exists on the process liquid. Further, claim 1, as amended, recites that the transmission fluid is pressurized "to a controlled level" and this further differentiates the present invention from the reference in that, as indicated above, the Bolleman et al patent merely provides for equalizing the pressure of the coupling fluid with that of the process liquid. Thus, for the reasons set forth above, it is respectfully submitted that claim 1, as amended, clearly defines over the Bolleman et al patent alone. This argument, of course, applies with equal force to the Everett and Cordemans et al patent in that the latter merely disclose the use of ultrasonic waves "from 20 kHz and above," as indicated by the Examiner and clearly do not make up the deficiencies of the Bolleman et al patent as a reference against claim 1.

Allowance of the application in its present form is respectfully solicited.

ATTACHMENT B

Amendments to th Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE ~~IS CONTAINED~~ IS CLAIMED ARE DEFINED AS FOLLOWS:

1. (Currently Amended) An apparatus for the ultrasonic treatment of a microbiology contaminated liquid comprising, a module having a treatment container and an ultrasonic generating means for subjecting ultrasonic vibrations on liquid in the container whereby contaminated liquid in the container subjected to the ultrasonic vibrations result in cavitation in that liquid and the destruction of microorganisms contained therein, the ultrasonic generating means being located outside of the container and submerged in a transmission fluid in an outer container, which fluid contacts an outside surface of the treatment container and the apparatus having a pressurization means for the transmission fluid in order to pressurize the transmission fluid to a controlled level and prevent cavitation occurring at areas surrounding the ultrasonic generating means~~.~~, the outer container having an interior and said pressurization means comprising a hydraulic cylinder connected to the interior of the outer container, the hydraulic cylinder including a piston therein and means for applying a predetermined pressure to the piston in the hydraulic cylinder.

2. (Original) An apparatus as defined in Claim 1, wherein the treatment container is a pipe through which the liquid can continuously flow and the ultrasonic vibration generating means is at least one piezoelectric ceramic ring surrounding the pipe.

3. (Previously Presented) An apparatus as defined in Claim 2, wherein a number of said ceramic rings are co-axial with the pipe, each ring being located adjacent to another ring.

4. (Original) An apparatus as defined in Claim 3, wherein the transmission fluid is an oil.

5. (Original) An apparatus as defined in Claim 4, wherein a number of modules are connected in parallel with inputs to each of said pipes being connected to an input manifold and outputs of each pipe being connected to an output manifold to form a bank of modules.

6. (Currently Amended) An apparatus as defined in Claim 4, wherein the pipe is stainless steel and extends through ~~an~~the outer container that has a fill hole for the oil and an air vent to vent air from the container as it is filled with the oil and means to seal the air vent once the container is filled with oil.

7. (Original) An apparatus as defined in Claim 6, wherein the ceramic rings are fixed in the outer container by a support attached to the outer container.

8. (Canceled)

9. (Currently Amended) An apparatus as defined in Claim ~~8~~2 wherein a number of modules are connected in parallel with inputs to each of said pipes being connected to an input manifold and outputs of each pipe being connected to an output manifold to form a bank of modules wherein transmission fluid in the modules is pressurized by a single hydraulic cylinder connected to all of the outer containers, the cylinder being provided with means to apply a predetermined pressure to a piston in the hydraulic cylinder.

10. (Currently Amended) An apparatus as defined in Claim ~~10~~9, wherein an equal number of modules are provided on each side of a central support structure.

11-20. (Canceled)

21. (New) An apparatus as defined in Claim 6, wherein a circular groove extends around an inner top surface of the outer container, an end of said air vent opening into said groove.

22. (New) An apparatus as defined in Claim 1 further comprising an air cylinder for loading said hydraulic cylinder.

23. (New) An apparatus as defined in Claim 1 wherein said ultrasonic generating means generates said ultrasonic vibrations in a frequency range of 22 kHz to 40 kHz.